

DEVICE FOR COLLECTING WATER FROM AIR

ABSTRACT OF THE DISCLOSURE

The present invention is directed to a water making device that collects the moisture contained in the atmosphere and condenses it into high purity water. In one embodiment, moist air entering the water making/water cooling system flows across an air filter, then a precooling heat exchanger (where the air stream is cooled to or close to its dew point) and then a water extraction heat exchanger, where the air stream is cooled further and water is extracted. The water that leaves water extraction heat exchanger is collected in a water collection device and passes from there through a primary water filter into a water storage tank. The air stream then passes across a reheat heat exchanger and exhausted to the outside. A water circulation pump extracts water from the water storage tank and circulates the water stream through an evaporator of a vapor compression refrigeration system, where the water stream is chilled, then through the water extraction heat exchanger and precooling, where the incoming air stream is chilled by removing heat to the water stream. The water stream is then circulated through the reheat heat exchanger, where the water stream is again cooled by removing heat to the cool dry air exiting the water extraction heat exchanger. Finally, the cooled water stream is circulated through the water filter to a three way valve, that directs water flow either to a dispenser or back to the water storage tank